REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1, 3, 7-14 and 16-26, with claims 20-26 being withdrawn from consideration.

The above amendment is responsive to points set forth in the Official Action.

Claim 1 has been amended and claims 2, 4, 5, 6 and 15 have been cancelled to be consistent with above-amended claim 1.

Further, claim 16 has been amended to be consistent with claim 1.

The significance of these amendments will become further apparent from the remarks below.

With regard to the rejections under 35 U.S.C. 112, the term "optionally" has been employed in place of "if necessary" in claim 1.

The trademarked items in issue have been deleted from claim 3.

Claims 1, 2, 4, 5 and 7-16 are rejected under 35 U.S.C. 102(b) as being anticipated by the Polymer article entitled 'Study of lanthanide triflates as new curing initiators for DGEBA" by Castelli et al.

This rejection is respectfully traversed.

The feature of claim 6, which has not been rejected as anticipated, has been incorporated in claim 1. Therefore, this rejection is clearly untenable.

Further, claims 1-14 and 16 have been rejected as being anticipated by PCT Publication No. WO 00/08087 or the Macromolecular Chemistry and Physics article entitled "Study of lanthanide triflates as new curing initiators for cycloaliphatic epoxy resins" by Mas et al.

In reply, the feature of claim 15, which has not been rejected as anticipated, has been incorporated in claim 1 and therefore, this rejection is also clearly untenable.

Still further, the Mas et al. article was published after Applicants' Japanese priority dates of February 8, 2001, February 27, 2001 and March 9, 2001. Verified English translations of said priority applications are submitted herewith.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Publication No. WO 94/09055 in view of PCT Publication No. WO 00/08087 and the Mas et al. article.

This rejection is respectfully traversed.

PCT '055 discloses a process for polymerizing cyclic ethers such as oxiranes, oxetanes, oxepanes, dioxolanes, trioxanes, and tetrahydrofurans to their respective polymers by contacting them with a selected metal compound, and teaches using metal triflate as said metal compound (see page 8 and 9 of PCT '055).

PCT '055 however, only teaches the use of compounds which have only one polymerizable cyclic ether structure per molecule, and teaches or suggests no idea of using compounds which have two or more polymerizable cyclic ether structures per molecule.

Furthermore, as cyclic ethers, PCT '055 concretely mentions only compounds of the formulae as shown on page 6, lines 12-14 and has no concrete disclosure about oxirane compounds having 2 to 50 alicyclic epoxy groups in a molecule.

Besides, PCT '055 relates to the polymerization of cyclic ethers and not to the crossslinking of cyclic ethers.

Such being the case, PCT '055 would have provided no suggestion about the features and technical advantages of the present invention.

PCT '087 discloses a composition of a crosslinkable epoxy resin system which comprises:

A) one or more epoxy resins which contain one or more functional epoxy groups, and

B) one or more lanthanide triflates.

As indicated by the Official Action, Example 4 on page 9 of PCT '087 mentions a mixture of 0.5 g of 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate and 5 mg (1 phr) of ytterbium triflate dissolved in a minimum quantity of methanol.

PCT '087 however, only teaches the use of lanthanide triflates as the metal triflate, and teaches or suggests no idea of using zinc triflates.

A composition which comprises, as metal triflates, lanthanide triflates as taught in PCT '087, e.g. ytterbium triflate [$Yb(OTf)_3$], has defects such as a very short pot life. Further, a 140°C baked coating film formed from this composition, after having been stored for only one day, is colored as can be clearly seen in "Curing composition A-4 (non-aqueous system)" of Table A in the Declaration attached hereto.

As is clearly seen in "Curing composition A-1" of Table A in said Declaration, a non-aqueous curing composition which comprises zinc triflate as the metal triflate in accordance with the present invention, has a pot life of one day or more, which is much longer than that of the composition which is made with ytterbium triflate, as taught in PCT '087.

Further, 140°C baked coating film formed from this composition, after having been stored for one day, is free from discoloration (color development) and therefore is superior to a composition made with ytterbium triflate.

As for the aqueous curing composition of the present invention, a 140°C baked coating film formed from this composition, after having been stored for three days, is free from discoloration (color development), as is clearly seen in "Curing composition A-15" of Table B in the attached Declaration. Therefore, the aqueous curing composition of this present invention is superior to the composition taught in PCT '087 which is made with ytterbium triflate.

The remarkable effects which are produced by the present invention could not have been predicted from PCT '087, which teaches only the use of lanthanide triflates as metal triflates.

Lastly, the Mas article is unavailable as prior art, as discussed above.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT '087, PCT '055 and the Mas et al. and Castelli et al. articles in view of Kitabatake et al. and Japanese Patent No. 4-359075 and the Proceedings of the International Water-Borne, High-Solids, and Powder coatings Symposium article entitle "Liquid, Sprayable, 'zero' VOC coatings utilizing cycloaliphatic epoxies" by Eaton et al.

This rejection is also respectfully traversed.

As discussed above, Mas is unavailable as prior art.

Castelli et al. discloses effects of lanthanide triflates used as catalysts for the curing of diglycidyl ether of bisphenol-A (DGEBA).

Castelli et al., however, teaches or suggests nothing about the curing of an oxirane compound have 2 to 50 alicyclic epoxy groups per molecule.

Further, Castelli et al. only mentions lanthanide triflates as examples of metal triflates used as catalysts and neither teaches nor suggests using zinc triflate.

As stated above, Castelli et al. discloses nothing about the features and advantages of the present invention. Therefore, Castelli et al. provides no suggestion of the present invention.

Thus, the foregoing rejection is untenable and should be withdrawn.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitabatake et al., Japanese Patent No. 4-359075 and Eaton et al. in view of PCT '087 and '055, Mas et al. and Castelli et al.

This rejection is also respectfully traversed.

Kitabatake (U.S. 6,369,133 B2) discloses a polyester-based aqueous coating composition comprising a mixture of:

a carboxyl-functional polyester resin;

a water-insoluble epoxy resin; and

a hydrophobic solvent,

the mixture being neutralized with neutralizer and dispersed or dissolved in water.

The above-mentioned coating composition is crosslinked by an esterification reaction between a carboxyl group in the polyester resin and an epoxy group in the epoxy resin (see column 5, lines 63-65).

Although Kitabatake teaches that an oxirane compound having 2 to 50 alicyclic epoxy groups in a molecule is usable as the above-mentioned epoxy resin, Kitabatake teaches or suggests no idea of crosslinking said oxirane compound with the cationic polymerization of the epoxy group.

Therefore, Kitabatake neither discloses nor suggests using metal triflates as catalysts for crosslinking reactions.

JP 4-359075A discloses a thermosetting aqueous coating composition comprising:

a polyester resin which contains a hydroxyl group and a carboxyl group;

an alicyclic epoxide; and

a quaternary ammonium compound.

Said coating composition is crosslinked and cured by the reaction between the hydroxyl group in the polyester resin and epoxide in the alicyclic epoxide, in the presence of carboxyl group in the polyester resin and of the quaternary ammonium salt.

Also, JP 4-359075A teaches or suggests no idea of crosslinking and curing said epoxide with the cationic polymerization of said alicyclic epoxide.

Thus, it is clear that JP 4-359075A neither teaches nor suggests the idea of using metal triflates as catalysts for crosslinking reactions.

Eaton et al. discloses a paint which comprises a liquid cycloaliphatic epoxy compound and caprolactone polyols having narrow molecular weight distribution which are diluted with water. Although this paint contains a triflate catalyst (FC-520 manufactured by 3M) as a curing catalyst, this catalyst is a blocked triflic acid, as is clearly seen at page 257, lines 18-13 from the bottom. As the Official Action states on page 6, this article has no mention of metal triflate. As is seen at page 258, lines 6-7, said blocked triflic acid is blocked with a volatile amine. Further, although the use of lithium triflate is mentioned at page 257, lines 18-13 from the bottom there is no mention of the use of zinc triflate.

Therefore, Eaton et al. teaches or suggests no idea of crosslinking and curing an oxirane compound having 2 to 50 alicyclic epoxy groups in a molecule with the use of zinc triflate.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

Hisashi ISAKA et al.

By: _____

Matthew M. Jacob
Registration No. 25,154
Attorney for Applicants

MJ/da
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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